

Title (en)  
Dual fuel delivery system

Title (de)  
Zweikraftstoffförsersystem

Title (fr)  
Système de distribution à deux carburants

Publication  
**EP 1496247 A1 20050112 (EN)**

Application  
**EP 04254084 A 20040707**

Priority  
AU 2003903612 A 20030708

Abstract (en)  
A fuel delivery system for an internal combustion engine is disclosed which has an injector for delivering diesel fuel, and a fuel delivery system for delivering liquid petroleum gas fuel. The fuels are delivered concurrently to the engine. A first transducer measures the amount of diesel fuel supplied to the engine by the injector, and a second flow transducer measures the amount of diesel fuel returned from the injector. A measuring unit determines the amount of fuel delivered by the injector to the engine by subtracting the amount as measured by the second flow meter from the amount measured by the first flow meter. Thus, the instantaneous flow rate of the diesel fuel can be determined and therefore, the amount of LPG which should be delivered in order to control emissions from the engine and to set the right ratio of the diesel fuel to the LPG fuel can also be determined. <IMAGE>

IPC 1-7  
**F02M 69/52**; **F02M 43/00**

IPC 8 full level  
**F02D 19/06** (2006.01); **F02D 19/08** (2006.01); **F02D 19/12** (2006.01); **F02D 41/00** (2006.01); **F02D 41/18** (2006.01); **F02D 41/38** (2006.01); **F02M 13/06** (2006.01); **F02M 17/20** (2006.01); **F02M 43/00** (2006.01); **F02M 69/52** (2006.01); **G01F 1/05** (2006.01); **G01F 9/00** (2006.01)

CPC (source: EP)  
**F02D 19/0628** (2013.01); **F02D 19/0647** (2013.01); **F02D 19/081** (2013.01); **F02D 19/12** (2013.01); **F02D 41/0027** (2013.01); **F02D 41/18** (2013.01); **F02D 41/38** (2013.01); **F02M 13/06** (2013.01); **F02M 17/20** (2013.01); **F02M 43/00** (2013.01); **G01F 1/05** (2013.01); **G01F 9/00** (2013.01); **F02D 2200/0614** (2013.01); **Y02T 10/30** (2013.01)

Citation (search report)  
• [Y] US 6260546 B1 20010717 - VAUGHN E LANNY [US]  
• [Y] US 4612804 A 19860923 - COLONNELLO RINO [FR]  
• [PY] US 2004089262 A1 20040513 - TAMURA MASAMITSU [JP], et al  
• [Y] DE 3105890 A1 19820909 - DAIMLER BENZ AG [DE]  
• [Y] DE 3143315 A1 19830511 - RAU SWF AUTOZUBEHOER [DE]  
• [Y] WO 9915860 A1 19990401 - ZEXEL CORP [JP], et al  
• [Y] GB 2041526 A 19800910 - DOORNES BEDRIJFSWAGEN FAB  
• [Y] US 4395919 A 19830802 - PETERS PAULUS J [NL]  
• [Y] US 2002195088 A1 20021226 - OPREA RADU [US]  
• [Y] US 4936280 A 19900626 - LANGLOIS GERARD [CA]  
• [Y] US 4323046 A 19820406 - BARBER STANLEY  
• [A] US 4218744 A 19800819 - KING PAUL E [US], et al

Cited by  
CN104736821A; GB2539906A; US11287163B2; US9695757B2; US9976526B2; WO2014063248A1; WO2023172388A1; WO2013061094A1; WO2013117942A3; WO2013003888A1; US9476367B2

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**EP 1496247 A1 20050112**; AU 2003903612 A0 20030724

DOCDB simple family (application)  
**EP 04254084 A 20040707**; AU 2003903612 A 20030708